Crick

CRICK

Sketches of 3 Nobel Prize Winners

Dr. Francis H. C. Crick

Dr. James Dewey Watson

Dr. Maurice H. F. Wilkins

Associated Press Wirephotos

Crick Contributed to Radar Development in World War II

Special to The New York Times.

NEW YORK.

Dr. Francis Harry Compton Crick is one of the men most responsible for making the helix a recognized symbol of the marvelous ingenuity of life.

In fact, his house at Cambridge University is called the Golden Helix.

Colleagues say Dr. Crick is also the extrovert of the triumvirate who yesterday won the 1962 Nobel Prize for Medicine and Physiology.

He is a colorful lecturer and, according to a report from London, somewhat Edwardian in manner, possessed of a fondness for Italian suits.

He lists as his sole recreation "conversation, especially with pretty women."

With ll hese accoutrements comes also a brilliant mind that helped produce a revolution in biology that is expected to broaden and deepen incomparably man's understanding of the nature of life.

He, with Dr. Maurice H. F. Wilkins and Dr. James K. Watson, won the Nobel award for making clear the structure and function of DNA, key substance in the transmission of genetic information from one generation to the next.

Seeks to Interpret Code

Dr. Crick has been especially concerned with attempts to work out the code by which the complex DNA molecule passes on instructions from generation

Watson, a Quiz Kid, Child Prodigy, Now Is a 'Young Turk'

Special to The New York Times.

NEW YORK.

James Dewey Watson personifies that small group of scientists who have the characteristics that the public attributes to scientists as a whole.

A child prodigy and Quiz Kid, college student at 15, Nobel Prize winner for work done at 25, he was described yesterday as a "Young Turk"—impatient with classicists in his science, extremely brilliant even by professorial standards, boyish and balding, quiet but not overly modest.

Now 34 years old, he lectures at Harvard University from well organized notes but without much fervor. Students sometimes suspect he is muttering into his shirt pocket.

Yet when he explains highly sophisticated theories in molecular biology and genetics, a colleague said, "I know few professors who can make things so clear."

Thanks in large part to the insight of Dr. Watson and the two British scientists who shared the Nobel Prize with him yesterday, genetics today is an exploding science, much as physics was 30 years ago as the atomic nucleus began taking shape.

"Jim tends to be somewhat intolerant" of fellow biologists who specialize in the classic, descriptive biology of pre-revolution days, it was said.

Cold Still Unconquered

Wilkins, Worked on Atomic Bomb, Moved to Biology

Special to The New York Times.

NEW YORK.

Dr. Maurice Hugh Frederick Wilkins has been intimately involved with two of the greatest revolutions in human history.

For helping shape the second of these, he shared the 1962 Nobel Prize for Medicine and Physiology.

An important factor in the current revolution in biology has been a merging of the talents of the physicist with those of the biologist in the field now called molecular biology.

This merging accounts for Dr. Wilkins' involvement in the earlier revolution, the one that ushered in the Atomic Age by the explosion of the first atomic bomb.

Born in New Zealand

Dr. Wilkins was born in New Zealand, the son of a physician, and was trained in physics at Cambridge and Birmingham Universities in England.

For two years during World War II he was a part of the Manhattan Project, working in Berkeley, Calif., on the separation of uranium isotopes—part of the essential research that led to development of the bomb.

Yesterday in New York, where he is visiting Dr. Leonard D. Hamilton at Memorial Sloan-Kettering Cancer Center, the 46-year-old scientist credited older physicists he knew during the war with stimulating his interest in biological research.

"A lot of top physicists were

3 BIOPHYSICISTS GET NOBEL PRIZE

Continued from Page 1, Col. 4

code governs the growth of the living organism.

May 'Correct Defects'

He predicted that eventually, when the deciphering is done, it might be possible to develop drugs that could react on the substance and "correct defects" that cause such "molecular diseases" as anemia and certain hereditary metabolic disorders.

The prize-winning work was begun in the early postwar years by Dr. Wilkins, after he returned to England from the United States, where he had participated in the Manhattan Project, which developed the atom bomb.

Turning from the nucleus of the living cell, he focused his attention on the molecules of deoxyribonucleic acid within it.

These DNA molecules were known to be part of the chromosome, or hereditary carrier, that could be seen within the cell nucleus with the aid of a microscope.

The DNA molecules were beyond the resolving power of optical microscopes, and so Dr. Wilkins used the X-ray defraction technique.

From the patterns formed by the X-rays on photographic plates, Dr. Wilkins concluded that the DNA molecule was in the shape of an intertwined spiral.

Joined in Construction

At this point the two other laureates who were working purely as theoreticians, made their contribution. In 1951-1952, when Dr. Watson was doing research at Cambridge he joined Dr. Crick in trying to construct a spiral model of what a molecule of deoxyribonucleic acid might lool like.

Their molecular model was subsequently demonstrated to be correct by Dr. Wilkins, who had refined his X-ray diffraction process to such precision that it could pinpoint the various atoms within the molecule.

Drs. Crick and Watson have since gone on to the problem of deciphering the "biological code," while Dr. Wilkins has continued his X-ray studies.

Today's prize announcement is the first of the 1962 Nobel awards.

The literature prize is to be made public next Thursday and physics and chemistry awards on Nov. 1.

The Nobel Peace Prize is awarded in Oslo by a special committee named by the Norwegian Parliament. The announcement is expected around the beginning of November.

The presentations are to be

on instructions from generation to generation, guiding the form and function that will be taken by each living thing.

Like bis British colleague, Dr. Wilkins, Dr. Crick worked in physics during World War I. He made important contributions to the development of radar.

Before the war he was graduated at University College, London, and Caius College, Cambridge. After the war, stimulated by several of the men who influenced Dr. Wilkins, he, too, switched to the emerging field of science that studies life at the molecular level.

The helix, the molecular structure of DNA, began to revolve in his mind at Cambridge, where he and a group of bright young men worked in the Medical Research Council's Unit for Molecular Biology.

The work crystalized in the early Nineteen Fifties under the related endeavors of Dr. Watson, Crick, Wilkins and their co-workers. Three definitive papers, published together in Nature in 1953, sent waves of excitement through the entire world community of biological scientists. The excitement still continues with no sign of abatement.

Model Was Described

The Watson-Crick paper described a model of DNA as a complex helical structure that employed the helical configuration to make possible the perfect replication of the original. This essentially was a description of the way DNA passed on its genetic information.

The replication hypothesis, based on two complementary halves of the molecule, "was very probably a shot in the dark," Dr. Wilkins said in an interview here yesterday.

Indeed, in 1953, Dr. Crick was quoted as saying of the Watson-Crick model, that "it simply smells right."

Later research — that by the three Nobel prize winners as well as work in many other laboratories throughout the world — has amply confirmed that first impression.

Yesterday in New York a geneticist said the crowning achievement of Watson and Crick was in appreciating the implications made by Dr. Wilkins' X-ray diffraction data and in fitting the details together.

Thebroad picture of the DNA molecule and its central function has come to seem rather obvious, Dr. Wilkins said yesterday in discussing the contribution of his friend and colleague, but in 1953 one needed great sagacity and insight to see it.

Cold Still Unconquered

Of the award Dr. Watson said, "It is an important thing we have accomplished, but we have not done away with the common cold — which I now have."

The slender, brown-haired scientist admitted he was "not surprised" at the Nobel committee's choice. Rumor had had the three men in the running for the prize for several years.

"Peoples have been telling me 'You're going to get it,' but my father was more certain than I," he said. Dr. Watson lives with his father, also James Watson, a retired businessman, near Harvard.

The future Nobel laureate was born in Chicago April 26, 1928. He was graduated from the University of Chicago in 1947. He wrote the University of Indiana about graduate study there in ornithology, and enrolled there even though the university had no specialty in bird study.

At Bloomington, he came under the influence of four eminent scientists—Hermann J. Muller, a Nobel laureate in genetics; Tracy M. Sonneborn, Ralph Cleland, and S. E. Luria. He wrote his doctor's thesis in 1950 on bacterial viruses, a near-life form that has helped unravel many secrets of heredity.

Professor Sonneborn recalled that Dr. Watson took no notes in class, only the listing of reference books he could get in the library.

He spent a year of post-doctoral work in Copenhagen but, as he told students yesterday, switched to Cambridge, England, because "things didn't work out well" in Denmark.

Theoretical Structure

There he worked with Prof. Francis H. C. Crick on inventing a theoretical structure of deoxyribonucleic acid, or DNA, from the experimental evidence of Dr. Maurice H. K. Wilkins. The model was described in a publication in 1953.

Dr. Watson said it was the Wilkins data, plus previously known ratios of the amount of chemical bases in DNA, that got him thinking about a double helical structure, like a two stranded rope, for the DNA molecule.

He spent two years at California Institute of Technology before going to Harvard as an assistant professor in biology in 1955. He became an associate professor in 1958 and full professor last year.

Dr. Watson's main hobby is collecting art, mostly modern paintings but also some sculpture. He recently bought a work of Henry Moore.

Yesterday when pressed by reporters on whether his studies on the mystery of replication could lead to improvements in humans, Dr. Watson, a bachelor, quipped: "I'd say that if you want to have an intelligent child, you should have an intelligent wife."

"A lot of top physicists were looking ahead and saw this as the coming thing in physics," Dr. Wilkins said, referring to biophysics and the field of molecular biology.

Returned to Britain

After the war he worked first at St. Andrew's University in Scotland and, thereafter, at the Medical Research Council's biophysics research unit at Kings College, London. He is now deputy director of the unit and an internationally recognized expert on the molecular structure of nucleic acids.

Dr. Wilkins' contributions to nucleic acid study have come through X-ray diffraction research. This is the study of molecular structure by analysis of the pattern of scattered X-rays formed when a molecule is bombarded by an X-ray beam.

Very crudely this can be likened to studying the structure of a folding chair by holding it in a beam of light and observing the pattern of shadows it casts. The shadows will vary with the position of the chair in the beam and the extent to which it is folded.

Can Examine Structure

In the X-ray work the patterns and their variations allow specialists to analyse structures too small to be seen with optical microscope.

In the early nineteen fifties, Dr. Wilkins succeeded in pulling a fiber from a viscous gel of DNA. Observing this under a microscope with polarized light he saw hints of crystaline structure in the fiber.

The crystalinity suggested use of the X-ray diffraction technique for further study. It was in this work that he saw hints of helical structure in the molecule.

It was on the basis of helical structure, more or less akin to a spiral staircase and related scientific clues that Drs. Watson and Crick put forward their model of DNA and its function.

Visiting New York

Dr. Wilkins, tall angular and blond, speaks of his work in polite slow tones with occasional flashes of humor. He is here for about two weeks to discuss DNA with Dr. Hamilton, who has long been supplying the British research workers with samples of purified DNA from many sources.

The samples have a white, fluffy but fibrous look, a little reminiscent of a crumpled piece of Kleenex.

Dr. Wilkins is married and has two children.

The presentations are to be made in ceremonies here and in Oslo on Dec. 10, the 16th anniversary of Nobel's death.

Won Lasker Award in 1060

Special to The New York Times.

NEW YORK.

The three Nobel Prize winner announced yesterday shared in 1960 a $5,000 medical research award presenetd by the Albert and Mary Lasker Foundation.

Mrs. Albert D. Lasker, president of the foundation, said she was pleased that the judgment of the foundation had been confirmed by the Nobel Prize. She noted that 15 Lasker Award winners had become Nobel Prize recipients in the last 16 years.